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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

GPO 123668
MAR 1940

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REPORT FOR THE MONTH OF MARCH 1940

HAVRE:

The month was characterized by moderate weather, no extremely high or low temperatures being recorded. The first 10 days in March saw our winter snow, 9 or 10 inches, disappear. There was considerable erosion on the S.C.S. contoured field because of its steep slope and the stubble being frozen. There was no run-off from the snow and rain that fell this month. Precipitation occurring on 12 days amounted to 1.12 inches compared with a normal of 0.53 inch. All the fields were too wet to do any field work. Even though the soil went into the winter very dry, the surface moisture is better than normal, penetrating around 20 inches in stubble. The crested wheatgrass plantings made last fall are emerging in excellent shape. Winter wheat survival is also pretty good.

All farm and plot machinery has been put in good condition. The W.P.A crew has salvaged around 2,000 feet of 6-inch water mains from the north end of the abandoned fort. The pipe will be relaid around the present grounds to afford irrigation for ground beautification.

The 2-year-old lots in the plane of nutrition and type work were closed out the middle of the month as calving began the last week. Exceptionally good gains were made in the full-fed lots this year. The cow herd showed an average winter gain of 95 pounds, which is considerably higher than usual. The calves and yearlings will continue on feed until April 24.

Visitors during the month included W. F. Long and Wayne Proff of Soil Conservation Service; and Dr. R. T. Clark, Ralph McCall, and John Cummings of the Animal Husbandry Department, Montana State College.

Maximum temperature, 62°; minimum, 9°; precipitation, 1.12 inches; snowfall, 9.0 inches.

JUDITH BASIN: Report for month of February 1940

Precipitation during February totaled 0.38 inch compared to the 31-year average of 0.54 for the month. The first two months of the year are 0.10 inch above the station average.

The mean temperature for February was practically that of the station average mean. During the last few days maximum temperatures in the fifties caused considerable run-off of water from melting snow until the soil thawed out sufficiently to retain the moisture.

The average daily wind velocity during the month was 6.0 miles per hour.

Maximum temperature, 52°; minimum, -16°; precipitation, 0.38 inch.

JUDITH BASIN:

The average mean temperature of 34° equalled the highest on record at this station for the month. Since 1911, only the years 1928 and 1933 recorded a March equally as warm. About one-third of the month had maximums of 50° or more. This warm weather caused snow to melt and penetrate the soil with little run-off.

There was less than average wind velocity for early spring. Dust storms were conspicuously absent.

Precipitation was approximately 80 percent above the mean. The 1.38 inches recorded in March bring the total for the first three months of the year to 0.72 inch above the mean. Not since 1918 have we recorded more precipitation in this period.

At present winter wheat in this area shows little or no damage from winter killing and appears in a good strong condition. Crested wheatgrass is responding to the favorable conditions indicating an early pasture for this season.

The steers in the winter pasture and feeding experiment were weighed March 13 at the end of the regular 28-day period and continued gains were shown. Next week final weights will be taken and the steers will go on a grain feed for a 60-70 day period.

To date no field work has been possible.

Maximum temperature, 60°; minimum, 1°; precipitation, 1.38 inches.

HUNTLEY:

Weather throughout most of March was relatively mild, dry, and windy. Such precipitation as was received came as light snows or showers which were of little benefit in adding moisture to the soil. Most plots which produced a crop in 1939 were dry at harvest time but since then have accumulated moisture to a depth of 6 to 8 inches. Plots which were in fallow last season have moisture to a depth of about 30 inches, preliminary tests show.

Winter wheat, rye, and crested wheatgrass have started nicely, but the stands of the grain crops are rather thin. Alfalfa and range grasses are starting slowly and look dry.

Field work was started on the plots March 14. The winter accumulation of weeds was gathered up and burned, certain plots of weedy crested wheatgrass were burned over, and plowing and other tillage for spring grains was completed by the 22nd. Finished seedbeds, especially on plowed ground, are dry and at present offer little inducement for early planting, although many farmers have sown their spring wheat, notwithstanding.

Maximum temperature, 68°; minimum, 13°; precipitation, 0.37 inch.
Average for March 0.91 inch.

SHERIDAN:

The past month was the warmest yet recorded here for March, the mean temperature being about 6° above the average. Snow left at the beginning of the month disappeared rapidly, with no run-off apparent except on the steepest slopes and in roads. Run-off from the winter precipitation as a whole was the least yet noted here.

Precipitation was 0.11 inch below the average for the month. All but 0.10 of it fell over the first 8 days of the month and added materially to the moisture content of the soil. Cloudy and threatening weather prevailed the most of the remainder of the month, but resulted in measureable precipitation only on 5 days, and traces of precipitation on 7 days. Samples taken the last of the month at random showed a moisture penetration varying from 12-18 inches, about the same as last year, and indicating that any crop to be obtained will be dependent upon moisture yet to fall. Prospects for irrigation water in the mountains are the poorest in many years.

Wind movement was the greatest since last April, but still was slightly below the average for the month. No soil blowing was apparent.

Considerable field work was done during the last half of the month and was quite general over this section the last 10 days. Russian thistles were cleared from much of the station, the ditch along the north side of the station to divert run-off water from the plots below it was completed and sown to grass, and contour spreader ditches were plowed out with the lister. Sweetclover was sown broadcast on the 2nd, and the remainder of that crop sown with the drill on the 22nd. The regular grass and alfalfa seeding was sown on the 19th, and a date of seeding spring grain on the 21st. Seed blocks of wheat, oats, and barley, and barley for feed, were sown the last week. Early spring plowing of the rotations was completed, and cultivation of the rotation field for early spring seeding is being completed today (4/1). The spring plowing worked up in better condition than in a long time.

Alfalfa, grasses, and fall sown grain, began to show green about the 20th and have now made considerable growth. A fair stand of winter wheat is apparent except on some of the continuously cropped plots. A fair stand of crested wheatgrass is apparent with some fall seedings of that crop, with none yet apparent in some other seedings, including one in which a fair stand of alfalfa has emerged.

Maximum temperature, 68°; minimum, 15°; precipitation, 1.10 inches.

DICKINSON:

Mild temperatures prevailed during most of March. An open spell just after the middle of the month permitted field work to be started. Cold, cloudy, and snowy weather the 3rd and 4th weeks brought precipitation up to nearly normal for the month. A trace or more of precipitation was recorded on 18 days during the month.

Precipitation for three months, January to March, was 1.22 inches. This was less than in 1939 and below average for the period. For the seven months, September to March, inclusive precipitation amounted to 2.01 inches. The 48-year average for these months is 4.54 inches.

At the end of the month the soil was wet only 6-8 inches. Fall plowed land still contained large dry clods which will require more precipitation to insure a good seedbed.

General optimism among farmers is not in direct relation to water in the soil. All available farms in the district have been leased, and some men have been unable to find places. More tractors have been sold locally than in any spring since 1929. Horses are selling cheap at sales.

Maximum temperature, 62°; minimum, -6°; precipitation 0.71 inch.

MANDAN:

The mean temperature for March was 3° F., above normal. The maximum temperature ranged from 61° on the 16th to 13° on the 22nd. The minimum temperature ranged from 32° on the 16th, to zero on the 22nd.

Wind velocity during the month was not high but averaged more than in 1939, for the same month. There were 4 days with an average of 10.0 miles per hour or slightly above.

The total snowfall for March was 10.0 inches, with 0.93 inch of precipitation. Snow fell on 19 days ranging from a trace on 8 days to 2.8 inches. The snow melted rapidly on the 29th with some run-off. By the end of the month the ground was practically bare.

No field work was possible during the month. At the present time, indications are for a later spring than in 1939.

BELLE FOURCHE:

March was mostly cloudy and unsettled with fog, fine rain, snow, or sleet prevailing a large part of the time. The precipitation was 0.54 inch above the average for March, but was distributed in numerous small amounts, the largest of which was 0.37 inch rain on March 5. Sleet storms on March 22, 23, 24, and 25 did some damage to trees and shrubs and seriously crippled electric power service. Owing to the continuous damp weather, only a small proportion of the moisture was lost through evaporation, and the soil was wet to a depth of 6 to 8 inches at the end of the month.

Temperatures were about normal, and the wind movement was exceptionally low for March. There were only two days in which the average wind velocity exceeded 10 miles per hour, the highest daily average being 13.3 miles per hour.

Fall-sown crops were materially benefitted by the precipitation during the month, particularly the rain on March 5. Winter wheat and winter rye resumed growth about March 20, and much of the grain which appeared to have been killed by the fall and winter drought is recovering. Satisfactory stands evidently will be obtained on all plots, with the possible exception of CC-A and CC-B. Crested wheatgrass commenced growth shortly after the middle of the month, and that seeded in November is germinating.

Maximum temperature, 67°; minimum, 2°; precipitation, 1.30 inches.

ARCHER:

The weather during March was somewhat milder than usual with a greater amount of precipitation than the 27-year average. These conditions were favorable for agriculture, in that livestock could be turned out to pasture thus reducing the stored feed consumption. The 27-year average precipitation for March is 0.55 inch. The total precipitation during March this year was 0.71 inch.

On March 5 the frost was out of the soil and two plots were plowed. On this date early grasses had begun to show green leaves, and by March 31 the crested wheatgrass fields were green. On March 31 all dry land spring plowing and duckfooting had been accomplished, the seeding of spring wheat for hay in the dairy field had started, and the cleaning of the barnyards was practically finished.

Director W. L. Quayle was a station visitor March 5.

Maximum temperature, 72°; minimum, 10°; precipitation, 0.71 inch.

NORTH PLATTE:

Temperatures were mild during the first week in March, and some field work in this section was started. Temperatures were below freezing during most of second week. Field work on the station began on March 15, and since that date nearly every day was favorable for field operations. All the spring small grains, the field peas, and sweetclover in the green manure rotations have been seeded. Over one-half an inch of moisture fell in the form of rain and snow on each of two days during the month. The total precipitation for the month was 0.32 inch above normal, and the accumulated precipitation since January is slightly above the normal for these three months.

The stands of winter wheat on the disked stubble, early-fall-plowed, and summer-tilled plots are good. The poorest stands are on the corn, sorghum, and late-fall-plowed plots. Moist soil is found in the upper two feet of the cropped plots, and above normal spring precipitation will be necessary to produce an average crop of small grain. On sod land there is wet soil only to a depth of 6-10 inches. Pastures are beginning to green up.

Maximum temperature 82°; minimum, 3°; precipitation 1.12 inches.

AKRON:

March opened with snow and rain amounting to 0.58 inch. This is the greatest single precipitation since August 18. Six measurable amounts fell up to the 12th. Field work could not be started because of wet surface until the 25th but was pursued uninterruptedly to the end of the month. By that time the Cereal varieties and nursery had been seeded and everything was in readiness to plant the rotation plots the first days of April. All soil surfaces being equally ready for planting, it is generally possible to seed the varieties while the rotation plots are being staked.

Winter wheat generally is just sprouted on the station projects. Prospects are yet very problematical with thistles sure to emerge concurrently or possibly in advance of the delayed wheat. All rotation plots plowed moist, and there is evidence most soil types cropped the year before have 16-20 inches of moist soil. The precipitation since the first of the year has been 1.94 inches and on dry, unfrozen soil it practically all went in. Drills have been busy the past ten days over the country side, mostly seeding barley.

Some four to six of the older Western Yellow and Austrian pines in the two-row neck extending out from the south end of the planting are dead this spring. There is this beginning evidence that these conifers set in 1912 and 1913 have about reached their life-span under the conditions that maintain in this region. Should they go out soon there are still several remarkable things about this tree compared to nearly equally hardy broad-leaf sorts. They have maintained their dignity of appearance right up to the end whereas hackberry and American elm, planted one to two years earlier, have been top-killing the past 5-8 years. These latter also have been semi-clean cultivated this entire time, whereas these pines have not been cultivated since 1920.

There has thus far been a grateful lack of hard driving northwest winds, which is very fortunate as much of the normally good cornland of very sandy nature to the northwest is absolutely uncovered and bare this spring.

Maximum temperature, 75°; minimum, 6°; precipitation, 1.59 inches.

COLBY:

March was, next to March 1939, the wettest March since 1891. The precipitation came in the form of both rain and snow on 15 days. The heaviest rain as well as snow fell on the 1st. Rain began falling at about 11 A. M. and continued until about 5 P.M. when it turned into a blinding snow storm. The wind drove the falling snow with fury, but it was too wet to drift, once it hit the ground. The snow storm continued almost all night. Tops and branches of many of the trees on the station and about town were broken by the weight of the snow in the wind.

There was not much suffering, as the temperature remained almost constant at 31°. Snow which fell on several occasions after this drifted considerably. Only three days in the month were clear.

The first dusty day with soil blowing for the year occurred on the 25th. Another dust storm came up on the night of the 27th. It was followed by an almost all day rain.

Winter wheat began to show above ground on the summer-fallowed plots on the morning of the 1st. It never made any further progress and almost no more came up until on the 31st, when enough came through the cracked and crusted surface so that the rows appeared green. That which came up last fall and survived the winter greened up considerably and appears promising. There is none of that kind on the station.

The spring small grains were planted on the 21st. They have a good start toward coming up. Weeds are also starting on fields that have not been worked. Soil samples show the moisture down to a depth of from 18 inches to 3 feet. There is slightly more moisture in stubble plot MCWW D than in fallow plot MCWW C.

Maximum temperature, 80°; minimum, 10°; precipitation, 2.42 inches; snow, 14 inches.

HAYS:

The first half of the month was generally quiet and cool with a few light showers. These kept the surface soil moist and in good condition for the emergence of winter wheat. Most of it had remained in the ground unsprouted until about the first of March. However, the development of the wheat sprouts was very slow perhaps due to the low temperature of the sub-surface soil. Emergence of the shallow seeded wheat began taking place about March 15. Since that time some wheat has been emerging daily, but the stand percentage is still extremely poor ranging from 5 or 10 percent to 30 percent with only an occasional field having 40 to 50 percent stand.

The last half of the month was dry. Some heavy winds with warm temperatures during the last week of the month dried out the surface soil until it is now hard and more or less crusted. Much of the wheat that is not up may be found curled under the crust and some of the leaves opened out. There are, however, still more plants coming slowly to the surface. At the present time the prospects for wheat are very discouraging. Only a few of the most optimistic farmers hope for a crop from 5 to 15 bushels. The extremely thin stand of wheat and weeds beginning to come presents a very bad picture to say the least.

The wheat on the Dry Land Project is in much the same condition as that on the commercial fields within the county. The stand varies from almost nothing to 30 percent on some of the best plots. Some of the poorest stands are on fallow. There is no order of "best methods" so far as stands are concerned. It may be awfully poor on one part of a plot and fair on another part, or the wheat may be fair in one drill row and practically no wheat in the next drill row. But for the fact that more wheat is emerging every day it would have seemed wise several days ago to reseed most of the plots to a spring crop. However, a light rain any time during the past ten days would have liberated enough plants from their prison under the surface to have made a fair stand. Abandonment has been postponed daily hoping that perhaps the next day would bring the needed moisture.

The surface soil on plots to be seeded to spring grains was moist and in fair condition for the seeding of barley, oats, and spring wheat, which was done the middle of the month. These crops are now just beginning to emerge, and the prospects for a good stand are fair.

The native grass is now just beginning to show life. Alfalfa fields are green and many weeds are coming up. Apricot trees are in bloom, and the deciduous trees along the stream are also beginning to show considerable green.

The sky was heavily laden with dust three days during the last week of the month. A few local fields contributed a share of the dust, but most of it came from a distance. For a period of one hour, at the beginning and end of which anemometer readings were made, the wind velocity was 34 miles per hour.

The temperature for the month varied between 11° on the 14th and 85° on the 31st. Precipitation was 0.83 inch. Most of this occurred during the first half of the month.

GARDEN CITY:

Precipitation for the month totaled 0.88 inch, and 0.62 inch of this came on the 1st, the rest fell in small showers or snow flurries. The average for the month is 0.78 inch. The total thus far this year is 1.53 inches, and the average 1.74 inches. However, moisture conditions are better than they have been for several years, partly due to the 0.86 inch which fell in December. Soil moisture samples taken November 21, 1939 and again February 28, 1940 showed that a low, thin thistle cover caught 1.54 inches of moisture of the 1.59 inches which fell during that period, while bare plots with no cover caught only 0.78 inch. Plots which were fallowed last year have very little more available moisture than those which were cropped and had a cover over winter.

There were 7 days in which there was dust in the air as compared with 10 in 1937, 17 in 1938, and 3 in 1939.

Field work consisted of springtoothing plots which were to be seeded and drilling flax, spring wheat, barley, oats, and rye. Barley was seeded on the plots which were to have been seeded to winter wheat last fall but were not due to the dry conditions. Moisture conditions were good at seeding time. Soil moisture samples were taken at seeding time on the M.C. wheat and basin lister project plots.

Station visitors were L. E. Call, R. I. Throckmorton and Rufus F. Cox, Kansas State College; C. J. Whitfield, S.C.S., Amarillo, Texas; J. E. Smith S.C.S., Woodward, Okla.; Don Atkins, S.C.S., Dodge City, Kansas, and approximately 300 farmers and business men who attended the Lamb Feeders' Day on March 9.

Maximum temperature, 88°; minimum, 14°; precipitation, 0.88 inch.

TUCUMCARI:

The month was nearly normal in temperature and wind movement, but precipitation of 0.94 inch was considerably above the long-time average for the month. High winds on a comparatively few days were disagreeable but not especially destructive; fields previously worked showed but very little soil movement.

Vegetation is far advanced, as no temperature below 25° has been recorded since mid-March. Early March precipitation was very beneficial, but no moisture has been received since the 11th. Very few fruit blooms have been injured, but it is very probable a killing frost will still occur.

Station labor has been devoted to planting and pruning trees and grapes. No blank listing has been performed but will start this week. Many neighboring fields have been listed. Soil moisture is good to a depth of about 2 feet.

Livestock passed the winter in good condition. Although temperatures of January and February were below normal and more snow than usual was received, the winter as a whole was favorable for cattle.

Contractors have begun work on the Conchas Lake end of the irrigation canal, and a drag line a few miles from Tucumcari has been operating about a month, directly under Reclamation Service.

Maximum temperature, 85°; minimum, 16°.

DALHART:

Climatic conditions were normal for the month. There were only two days of severe soil movement, the first day of the month being the worst. Three other days gave high soil movement, and 9 others were characterized by soil flurries during the day.

Winter wheat and rye were definitely abandoned on the station, and these plots were planted to oats and barley. The oat plots were also seeded the latter part of the month. Conditions are not favorable for the spring seeded grains. Sweetclover emerged to fair stands, but apparently soil bearing winds will destroy all the young seedlings.

By the end of the month Chinese elm seed was well formed. The aprocot trees are just passed the full bloom stage. The early cherries and plums are now blooming. Peach and pear trees are nearly ready to bloom. Some replanting of trees has been accomplished but this work has not been rushed. Strip cultivating was necessary during the month.

Maximum temperature, 84°; minimum, 17°; precipitation, 0.31 inch.

BIG SPRING:

Temperatures during the month were rather moderate, with a minimum of 24° on the 13th and a freezing temperature of 32° on the 24th. Neither of these temperatures appear to have injured the fruit blossoms, so for the present, at least, the prospects for a fruit crop this year appear much better than for several years past. The maximum temperature on March 31 climbed to 95°, which is a new high for March at this station. Precipitation was almost nothing for the month; one sprinkle of 0.05 inch and another of 0.04 was all that was recorded. On three occasions wind velocity reached sand blowing proportions. Most of the farms in this area have been listed since the last rain of any amount, so the fields have remained rough enough to prevent any great amount of soil movement.

Station work has consisted of overhauling machinery, repairing and oiling harness, staking and trimming wheat plots, moving trees, and setting shrubs.

Maximum temperature, 95°; minimum, 24°; precipitation, 0.09 inch.

LAWTON:

Crop conditions deteriorated with the drought that continued throughout March. No precipitation has been recorded since the middle of February. During the last 7 months, September to March, 4.90 inches of precipitation were recorded, and the deficiency for the period totals 8.42 inches.

A maximum temperature of 97° on the 31st, and a minimum of 24° on the 24th was destructive to peaches, pears, and plums that were in full bloom.

Evaporation for the month amounted to 6.502 inches. The highest wind velocity for 24 hour periods was 18.2 and 19.6 miles per hour on the 1st and 6th, respectively.

Loss of moisture in the first foot of soil whether cropped or uncropped has seriously handicapped farm operations. Trees are leafing out very slowly and a good many have succumbed to the extended drought of more than a year. Grasses, and legumes made but little growth during the month, and the shortage of feed and water has reduced the numbers of livestock normally maintained.

Wheat, oats, and barley in the station seedings have made some growth, but prospects for yields of much consequence are decidedly dim. Spring plowing of plots except fallow was done during the last week in March. The ground turned over loose and ashy, and the seedbeds were packed with a disk harrow set comparatively straight. Fall-plowed plots, generally hard and lumpy were also cut down with the disk harrow. In the event moisture is received it is hoped that preparation of seedbeds can be completed quickly.

Corn was planted March 29. In most instances there is not enough moisture to insure a uniform stand.

An outbreak of cutworms has been quite general in the southwestern part of the State during the month and some injury has been reported. A good deal of poisoning was done on the station to control injury to spring seeded small grains.

WOODWARD:

With only 0.18 inch of precipitation, March was one of the driest in Station experience. A maximum temperature of 95° on the 31st set a new high mark for the month. The mean temperature, however, was only slightly above normal. Strong winds on the 1st, 6th, and 27th caused considerable soil movement, cultivation of exposed points being necessary. Winter wheat made rather slow growth, the condition of the crop over a widespread area probably being the poorest in recent years.

Owing to thin stands and inadequate tillering, nearly all experimental winter wheat plots, because of soil blowing, had to be ridged with 5-inch bull tongue shovels mounted 8 feet apart on a cultivator frame. This implement did surprisingly little damage to stands and accomplished rather effective temporary control. Some early listing, leveling, and other work was accomplished on the SCS farm. Soil samples for detailed chemical analyses were obtained from 65 plots in the grass rotations. Early plantings of grasses and certain small grains have also been made.

Pruning grape vineyards was completed early in the month. Early blooming apricots suffered frost damage on the 24th, however, prospects continue to be favorable for later selections. Plums thus far have largely escaped injury. Tomatoes have been started in the old greenhouse and plans for a vegetable garden outlined. A water heated hot bed connected with the new greenhouse was also constructed.

Packing and shipping of trees and shrubs for experimental cooperative plantings was continued. A large number of cooperators called at the Station, even from as far distant as New Mexico, to secure balled

and burlapped evergreens. Other work during the month consisted of potting rooted cuttings, deciduous and evergreen plant materials in the greenhouse. Various experimental seeds were also planted in the greenhouse and dates of planting cuttings made. Replacements in permanent testing blocks on the Station were completed. Numerous cooperators and Station visitors inspected the testing blocks. Several field trips were made to New Mexico and the Panhandle regions of Texas and Oklahoma.

Physical plant work was confined chiefly to laying the new pipeline extension, now practically completed. Approximately 8,700 feet of main line and laterals are in the ground, together with the installation of valves, risers, fire plugs, and other fixtures. Excavation for installation of valves, risers, fire plugs, and other fixtures. Excavation for increasing the size of the distribution reservoir was finished, the estimated capacity being 5 acre feet.

The lake reservoir, which when full at the 21-foot stage has a capacity of roughly 300 acre feet, is still relatively low, the level having remained nearly constant over winter at about 7.3 feet. At present there is a rather weak inflow from the Spring Creek drainage area.

Maximum temperature, 95°; minimum, 20°; precipitation, 0.18 inch.